

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael Feller (Reg# 59,296) on 3/31/2011.

The application has been amended as follows:

Claim 30 is cancelled.

Claim 36 (currently amended) An apparatus for producing an audio signal as a replacement for a pre-recorded audio signal synchronized with a pre-recorded video signal, the apparatus comprising: one or more non-transitory computer readable mediums; a database populated with data representing the pre-recorded audio signal synchronized with the pre-recorded video signal, and data indicative of the timing of the pre-recorded audio signal relative to the pre-recorded video signal; means for deriving from the pre-recorded audio signal first feature data encoding audible time-varying acoustic features of a predetermined type and the timing thereof in the pre-recorded audio signal; means for receiving and storing an input audio signal having timing similar to that of the pre-recorded audio signal; means for deriving from the input audio signal second feature data encoding audible time- varying acoustic features of said predetermined type and the timing thereof within the input audio signal; means for determining timing differences existing between the first feature data and the second

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feature data; means for altering the timing of the acoustic features of the stored input audio signal to match the timing of the corresponding acoustic features of the pre-recorded audio signal and producing thereby an edited replacement audio signal; and means for selecting a start time for starting outputting of the edited replacement audio signal to coincide with a corresponding start time of the pre-recorded audio signal relative to the pre-recorded video signal and for starting muting of the pre-recorded audio signal, ~~wherein the database, the means for deriving first feature data, the means for receiving and storing an input audio signal, the means for deriving second feature data, the means for determining timing differences, the means for altering the timing, and the means for selecting the start time are each stored in at least one of the one or more non-transitory computer readable mediums.~~

Claim 40 (currently amended) An apparatus for producing an audio signal as a replacement audio signal for a pre-recorded audio signal synchronized with a pre-recorded video signal, the apparatus comprising: one or more non-transitory computer readable mediums; a database populated with data representing the pre-recorded audio signal synchronized with the pre-recorded video signal, and data indicative of the timing of the pre-recorded audio signal relative to the pre-recorded video signal; an audio system for receiving and storing an input audio signal having timing similar to that of the pre-recorded audio signal; a comparing unit deriving from the pre-recorded audio signal first feature data encoding audible time-varying acoustic features of a predetermined type and the timing thereof in the pre-recorded audio signal and deriving from the input audio signal second feature data encoding audible time-varying acoustic features of the

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predetermined type and the timing thereof within the input audio signal, and determining timing differences existing between the first feature data and the second feature data; an editing unit for altering the timing of the acoustic features of the stored input audio signal to match the timing of the corresponding acoustic features of the pre-recorded audio signal to produce thereby an edited replacement audio signal; and a timer for selecting a start time for starting outputting of the edited replacement audio signal to coincide with a corresponding start time of the pre-recorded audio signal relative to the pre-recorded video signal and for starting muting of the pre-recorded audio signal; ~~wherein the database, the audio system, the comparing unit, the editing unit, and the timer are each stored in at least one of the one or more non-transitory computer readable mediums.~~

Claim 41 (currently amended) An apparatus for producing an audio signal as a replacement audio signal for a pre-recorded audio signal synchronized with a pre-recorded video signal, the apparatus comprising: one or more non-transitory computer readable mediums; a database populated with data representing the pre-recorded audio signal synchronized with the pre-recorded video signal, and data indicative of the timing of the pre-recorded audio signal relative to the pre-recorded video signal; an audio system for receiving and storing an input audio signal having timing similar to that of the pre-recorded audio signal; a first acoustic feature extracting unit for deriving from the pre-recorded audio signal first feature data encoding audible time-varying acoustic features of a predetermined type and the timing thereof in the pre-recorded audio signal; a second acoustic feature extracting unit for deriving from the input audio signal

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second feature data encoding audible time-varying acoustic features of the predetermined type and the timing thereof within the input audio signal; a comparator for determining timing differences existing between the first feature data and the second feature data; an editing unit for altering the timing of the acoustic features of the stored input audio signal to match the timing of the corresponding acoustic features of the pre-recorded audio signal to produce thereby an edited replacement audio signal; and a timer for selecting a start time for starting outputting of the edited replacement audio signal to coincide with a corresponding start time of the pre-recorded audio signal relative to the pre-recorded video signal and for starting muting of the pre-recorded audio signal, ~~wherein the database, the database, the audio system, the first acoustic feature extracting unit, the second acoustic feature extracting unit, the comparator, the editing unit, and the timer are each stored in at least one of the one or more non-transitory computer readable mediums.~~

Claim 43 (currently amended) An apparatus for producing an audio signal as a replacement audio signal for a pre-recorded audio signal synchronized with a pre-recorded video signal, the apparatus comprising: one or more non-transitory computer readable mediums; a database populated with data representing the pre-recorded audio signal synchronized with the pre-recorded video signal, and data indicative of the timing of the pre-recorded audio signal relative to the pre-recorded video signal; an audio system for receiving and storing an input audio signal having timing similar to that of the pre-recorded audio signal; a comparing unit deriving from the pre-recorded audio signal first feature data encoding audible time-varying acoustic features of a predetermined

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type and the timing thereof in the pre-recorded audio signal and deriving from the input audio signal second feature data encoding audible time-varying acoustic features of the predetermined type and the timing thereof within the input audio signal, and determining timing differences existing between the first feature data and the second feature data; an editing unit for altering the acoustic features of the stored input audio signal to produce thereby an edited replacement audio signal having acoustic features of the predetermined type with timing matching the timing of the corresponding acoustic features of the pre-recorded audio signal; and a timer for selecting a start time for starting outputting of the edited replacement audio signal to coincide with a corresponding start time of the pre-recorded audio signal relative to the pre-recorded video signal and for starting muting of the pre-recorded audio signal, ~~wherein the database, the audio system, the comparing unit, the editing unit, and the timer are each stored in at least one of the one or more non-transitory computer readable mediums.~~

Claim 44 (currently amended) An apparatus for producing an audio signal as a replacement audio signal for a pre-recorded audio signal synchronized with a pre-recorded video signal, the apparatus comprising: one or more non-transitory computer readable mediums; a database populated with data representing the pre-recorded audio signal synchronized with the pre-recorded video signal, and data indicative of the timing of the pre-recorded audio signal relative to the pre-recorded video signal; an audio system for receiving and storing an input audio signal having timing similar to that of the pre-recorded audio signal; a first acoustic feature extracting unit for deriving from the pre-recorded audio signal first feature data encoding audible time-varying acoustic

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features of a predetermined type and the timing thereof in the pre-recorded audio signal; a second acoustic feature extracting unit for deriving from the input audio signal second feature data encoding audible time-varying acoustic features of the predetermined type and the timing thereof within the input audio signal; a comparator for determining timing differences existing between the first feature data and the second feature data; an editing unit for altering the acoustic features of the stored input audio signal to produce thereby an edited replacement audio signal having acoustic features of the predetermined type with timing matching the timing of the corresponding acoustic features of the pre-recorded audio signal; and a timer for selecting a start time for starting outputting of the edited replacement audio signal to coincide with a corresponding start time of the pre-recorded audio signal relative to the pre-recorded video signal and for starting muting of the pre-recorded audio signal, ~~wherein the database, the database, the audio system, the first acoustic feature extracting unit, the second acoustic feature extracting unit, the comparator, the editing unit, and the timer are each stored in at least one of the one or more non-transitory computer readable mediums.~~

2. **Claims 1-4, 6-10, 12, 16 and 31-44** are allowed.

3. The following is an examiner's statement of reasons for allowance: **Independent claim 1** recites the uniquely distinct features for "an audio feature analyzer for abstracting from said selecte portion of said first audio data stream a stream of time-varying features representative of time-varying acoustic features and for abstracting corresponding time-varying features from an input second audio data stream; a timing

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analysis and waveform editing processor adapted to determine timing differences between said stream of time-varying features and said corresponding time-varying features and to utilize said timing differences to edit said input second audio data stream to produce an edited input second audio data stream having acoustic features aligned with the acoustic features of said selected portion of said first audio data stream; and a playback control module adapted to control running of said synchronized first audio data and video data streams with said edited input second audio data stream such that said edited input second audio data stream replaces said selected portion and is synchronized with said corresponding visual events in said video data stream”;

Independent claim 2 recites the uniquely distinct features for "audio feature data for providing a data stream of time-varying features abstracted from at least a selected portion of said first audio data stream and representative of audible time-varying acoustic features; an audio feature analyzer for abstracting a corresponding stream of time-varying features from an input second audio data stream; a timing analysis and waveform editing processor adapted to determine timing differences between said streams of time-varying features and to utilize said timing differences to edit said input second audio data stream and produce edited input audio data having acoustic features aligned with the acoustic features of said selected portion of said first audio data stream; and a playback control module adapted to control running of said synchronized audio data and video data streams with said edited input second audio data such that said edited input second audio data replaces said selected portion and is synchronized with said corresponding visual events in said video data stream”; **Independent claim 6**

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recites the uniquely distinct features for “storing in the non-transitory computer readable medium an audio feature analyzer for abstracting a corresponding stream of time-varying features from an input second audio data stream; storing in the non-transitory computer readable medium a timing analysis and waveform editing processor adapted to determine timing differences between said data stream of time-varying features and corresponding features abstracted from said input second audio data stream and to produce an editing input second audio data stream from which said timing differences are substantially removed having acoustic features aligned with the acoustic features of said selected portion of said first audio data stream; and storing in the non-transitory computer readable medium a playback control module for controlling running of said synchronized audio data and video data streams with edited second input audio data from said processor such that said edited input second audio data replaces said selected portion and is synchronized with said corresponding visual events in said moving picture video data stream”; **Independent claim 10** recites the uniquely distinct features for “abstracting from said input second audio data stream a stream of time-varying features of the input second audio data stream, said time-varying features being representative of audible time-varying acoustic features; comparing, using a programmable processor executing computer-executable instructions, the abstracted stream of time-varying features from said input second audio data stream with a corresponding stream of time-varying features abstracted from said selected portion of said original first audio data stream and determining timing differences between said streams of time-varying features; editing said second audio data stream utilizing said

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timing differences to produce edited input second audio data having acoustic features aligned with the acoustic features of said selected portion of said first audio data stream; and running said portion of said video data stream with said edited input second audio data such that said edited input second audio data replaces said selected portion and is synchronized with said corresponding visual events in said moving picture video data stream"; **Independent claim 16** recites the uniquely distinct features for "a feature analysis program adapted to derive from audio data feature data representative of audible time-varying acoustic features of the audio data; a comparison and timing program adapted to compare first feature data derived from first audio data synchronized with corresponding visual events in moving picture video data with second feature data derived from second audio data and to determine timing differences between the first and second feature data; an editing program adapted to edit the second audio data in dependence upon said timing differences such as to provide edited second audio data in a synchronous relation to said first audio data; and a streaming program adapted to synchronously output said video data and said edited second audio data while muting said first audio data whereby said edited second audio data replaces said first audio data and is synchronized with said corresponding visual events in said video data"; **Independent claim 31** recites the uniquely distinct features for "providing first feature data that is derived from the pre-recorded audio signal and encodes audible time-varying acoustic features of a predetermined type and the timing thereof within the pre-recorded audio signal; providing second feature data that is derived from the input audio signal and encodes audible time-varying acoustic features

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of the predetermined type and the timing thereof within the input audio signal;
determining timing differences existing between the first feature data and the second
feature data; altering the timing of the acoustic features of the stored input audio signal
to match the timing of the corresponding acoustic features of the pre-recorded audio
signal to produce thereby an edited replacement audio signal; and selecting a start time
for starting outputting of the edited replacement audio signal to coincide with a
corresponding start time of the pre-recorded audio signal relative to the pre-recorded
video signal and for starting muting of the pre-recorded audio signal”; **Independent**
claim 36 recites the uniquely distinct features for “means for deriving from the pre-
recorded audio signal first feature data encoding audible time-varying acoustic features
of a predetermined type and the timing thereof in the pre-recorded audio signal; means
for receiving and storing an input audio signal having timing similar to that of the pre-
recorded audio signal; means for deriving from the input audio signal second feature
data encoding audible time- varying acoustic features of said predetermined type and
the timing thereof within the input audio signal; means for determining timing differences
existing between the first feature data and the second feature data; means for altering
the timing of the acoustic features of the stored input audio signal to match the timing of
the corresponding acoustic features of the pre-recorded audio signal and producing
thereby an edited replacement audio signal; and means for selecting a start time for
starting outputting of the edited replacement audio signal to coincide with a
corresponding start time of the pre-recorded audio signal relative to the pre-recorded
video signal and for starting muting of the pre-recorded audio signal”; **Independent**

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claim 40 recites the uniquely distinct features for "a database populated with data representing the pre-recorded audio signal synchronized with the pre-recorded video signal, and data indicative of the timing of the pre-recorded audio signal relative to the pre-recorded video signal; an audio system for receiving and storing an input audio signal having timing similar to that of the pre-recorded audio signal; a comparing unit deriving from the pre-recorded audio signal first feature data encoding audible time-varying acoustic features of a predetermined type and the timing thereof in the pre-recorded audio signal and deriving from the input audio signal second feature data encoding audible time-varying acoustic features of the predetermined type and the timing thereof within the input audio signal, and determining timing differences existing between the first feature data and the second feature data; an editing unit for altering the timing of the acoustic features of the stored input audio signal to match the timing of the corresponding acoustic features of the pre-recorded audio signal to produce thereby an edited replacement audio signal; and a timer for selecting a start time for starting outputting of the edited replacement audio signal to coincide with a corresponding start time of the pre-recorded audio signal relative to the pre-recorded video signal and for starting muting of the pre-recorded audio signal"; **Independent claim 41** recites the uniquely distinct features for "a first acoustic feature extracting unit for deriving from the pre-recorded audio signal first feature data encoding audible time-varying acoustic features of a predetermined type and the timing thereof in the pre-recorded audio signal; a second acoustic feature extracting unit for deriving from the input audio signal second feature data encoding audible time-varying acoustic features of the

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predetermined type and the timing thereof within the input audio signal; a comparator for determining timing differences existing between the first feature data and the second feature data; an editing unit for altering the timing of the acoustic features of the stored input audio signal to match the timing of the corresponding acoustic features of the pre-recorded audio signal to produce thereby an edited replacement audio signal; and a timer for selecting a start time for starting outputting of the edited replacement audio signal to coincide with a corresponding start time of the pre-recorded audio signal relative to the pre-recorded video signal and for starting muting of the pre-recorded audio signal"; Independent claim 42 recites the uniquely distinct features for "providing first feature data that is derived from the pre-recorded audio signal and encodes audible time-varying acoustic features of a predetermined type and the timing thereof within the pre-recorded audio signal, providing second feature data that is derived from the input audio signal and encodes audible time-varying acoustic features of the predetermined type and the timing thereof within the input audio signal; determining timing differences existing between the first feature data and the second feature data; altering acoustic features of the stored input audio signal to produce thereby an edited replacement audio signal such that the timing of the acoustic features of the predetermined type of the edited replacement audio signal matches the timing of the acoustic features of the pre-recorded audio signal; and selecting a start time for starting outputting of the edited replacement audio signal to coincide with a corresponding start time of the pre-recorded audio signal relative to the pre-recorded video signal and for starting muting of the pre-recorded audio signal"; Independent claim 43 recites the uniquely distinct

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features for “a database populated with data representing the pre-recorded audio signal synchronized with the pre-recorded video signal, and data indicative of the timing of the pre-recorded audio signal relative to the pre-recorded video signal; an audio system for receiving and storing an input audio signal having timing similar to that of the pre-recorded audio signal; a comparing unit deriving from the pre-recorded audio signal first feature data encoding audible time-varying acoustic features of a predetermined type and the timing thereof in the pre-recorded audio signal and deriving from the input audio signal second feature data encoding audible time-varying acoustic features of the predetermined type and the timing thereof within the input audio signal, and determining timing differences existing between the first feature data and the second feature data; an editing unit for altering the acoustic features of the stored input audio signal to produce thereby an edited replacement audio signal having acoustic features of the predetermined type with timing matching the timing of the corresponding acoustic features of the pre-recorded audio signal; and a timer for selecting a start time for starting outputting of the edited replacement audio signal to coincide with a corresponding start time of the pre-recorded audio signal relative to the pre-recorded video signal and for starting muting of the pre-recorded audio signal”; **Independent claim 44** teaches the uniquely distinct features for “a database populated with data representing the pre-recorded audio signal synchronized with the pre-recorded video signal, and data indicative of the timing of the pre-recorded audio signal relative to the pre-recorded video signal; an audio system for receiving and storing an input audio signal having timing similar to that of the pre-recorded audio signal; a first acoustic

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feature extracting unit for deriving from the pre-recorded audio signal first feature data encoding audible time-varying acoustic features of a predetermined type and the timing thereof in the pre-recorded audio signal; a second acoustic feature extracting unit for deriving from the input audio signal second feature data encoding audible time-varying acoustic features of the predetermined type and the timing thereof within the input audio signal; a comparator for determining timing differences existing between the first feature data and the second feature data; an editing unit for altering the acoustic features of the stored input audio signal to produce thereby an edited replacement audio signal having acoustic features of the predetermined type with timing matching the timing of the corresponding acoustic features of the pre-recorded audio signal". The cited prior art of Sherman (US 6,661,496), Nakamura (US 7,424,204), Coden (us 6,816,858), Heckerman (6,260,011), disclose systems that allows for matching of audio signals and or systems allowing for dubbing, either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GELEK TOPGYAL whose telephone number is (571)272-8891. The examiner can normally be reached on 8:30am -5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter-Anthony Pappas can be reached on 571-272-7646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gelek Topgyal/
Examiner, Art Unit 2481

/Peter-Anthony Pappas/
Supervisory Patent Examiner, Art Unit 2481